

## HW1

Due date: 04/19/2018

1. Durrett exercise 5.3.12
2. Durrett exercise 5.3.13
3. Durrett exercise 5.4.5
4. Durrett exercise 5.4.6
5. Suppose that  $\{X_n\}$  is an integrable  $\mathcal{F}_n$ -adapted sequence such that  $E(X_\tau) = E(X_0)$  for every bounded  $\mathcal{F}_n$ -stopping time  $\tau$ . Show that  $\{X_n\}$  must be a  $\mathcal{F}_n$ -martingale
6. Durrett exercise 5.5.1